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SEROLIS APHELES, A NEW SPECIES (ISOPODA: SEROLIDAE) FROM THE SOUTHWEST INDIAN OCEAN, AND A RANGE EXTENSION FOR *SEROLIS ANTARCTICA* BEDDARD, 1884

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Abstract.—*Serolis apheles,* a new species of deepwater marine serolid isopod from the Madagascar Plateau, is described. Diagnostic features include absence of eyes, small size relative to that of cogeners, smooth dorsum, and coxal plates on pereonite 6 that extend posteriorly, nearly to the apex of the pleotelson. A new locality record for *Serolis antarctica* Beddard, 1884, extends its range in the Indian Ocean from sub-Antarctic waters off Crozet Island to the Natal Basin off Mozambique. It has not been otherwise recorded since first collected in 1873 during the *Challenger* Expedition.

The family Serolidae contains more than 80 currently known species, 22 of which are found in the Indian Ocean (down to 60 degrees South) from shallow water to abyssal depths. Thirteen of these (in the genera *Serolis* and the closely-related *Serolina*) have been described from coastal areas off south and western Australia (Poore 1987). *Serolis apheles* is the second in the genus to be found in South African waters; *Serolis brinki* Kensley, 1978 was discovered off Natal. The remaining eight Indian Ocean species (*Ceratoserolis trilobitoides* (Eights, 1833); *S. antarctica* Beddard, 1884; *S. aspera* Sheppard, 1933; *S. bromleyana* Suhm, 1876; *S. latifrons* White, 1847; *S. monodi* Cals, 1979; *S. quadricarinata* White, 1847; and *S. septemcarinata* Miers, 1875) have been recorded near the Prince Edward, Crozet, and Kerguelen islands in surrounding deep-water basins. *Serolis cornuta* Studer, 1879 from Crozet and Kerguelen Islands, has been synonymized by Brandt (1988) with *C. trilobitoides.* The material dealt with in this paper was collected during the 1964 cruise of the International Indian Ocean Expedition (IIOE) research vessel *Anton Bruun.* The new species was collected at 950 m on the Madagascar Plateau. Later that year a specimen of *S. antarctica* was collected at 875–890 fathoms (1601–1629 m) off the coast of Mozambique near the Natal Basin.

Both specimens treated herein are deposited at the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM).

Serolis apheles, new species
Figs. 1A–H, 2A–G, 3A–F

Material examined.—USNM 252414, Holotype male, TL 5.6 mm IIOE R/V *Anton Bruun* cr. 7, sta 380-C, Menzies trawl, 32°58′S, 43°41′E, 950 m, 30 Aug 1964.

Diagnosis.—Body slightly longer than wide, nearly circular in outline, lacking dorsal tubercles and spines. Head with anterolateral angles acute, slightly produced, anterior margin emarginate with small medial projection and tiny projection to each side. Eyes absent.

Coxal plates demarked by sutures on pereonites 2 to 4. Coxal plate 5 extending slightly beyond third pleonite; that of pereonite 6 extending almost to apex of pleotelson. Pleotelson as long as broad, without ornamentation, slightly vaulted and broadly rounded, with obtuse angle apically.

Antennular flagellum of 29–30 articles. Antennal peduncle nearly reaching poste-

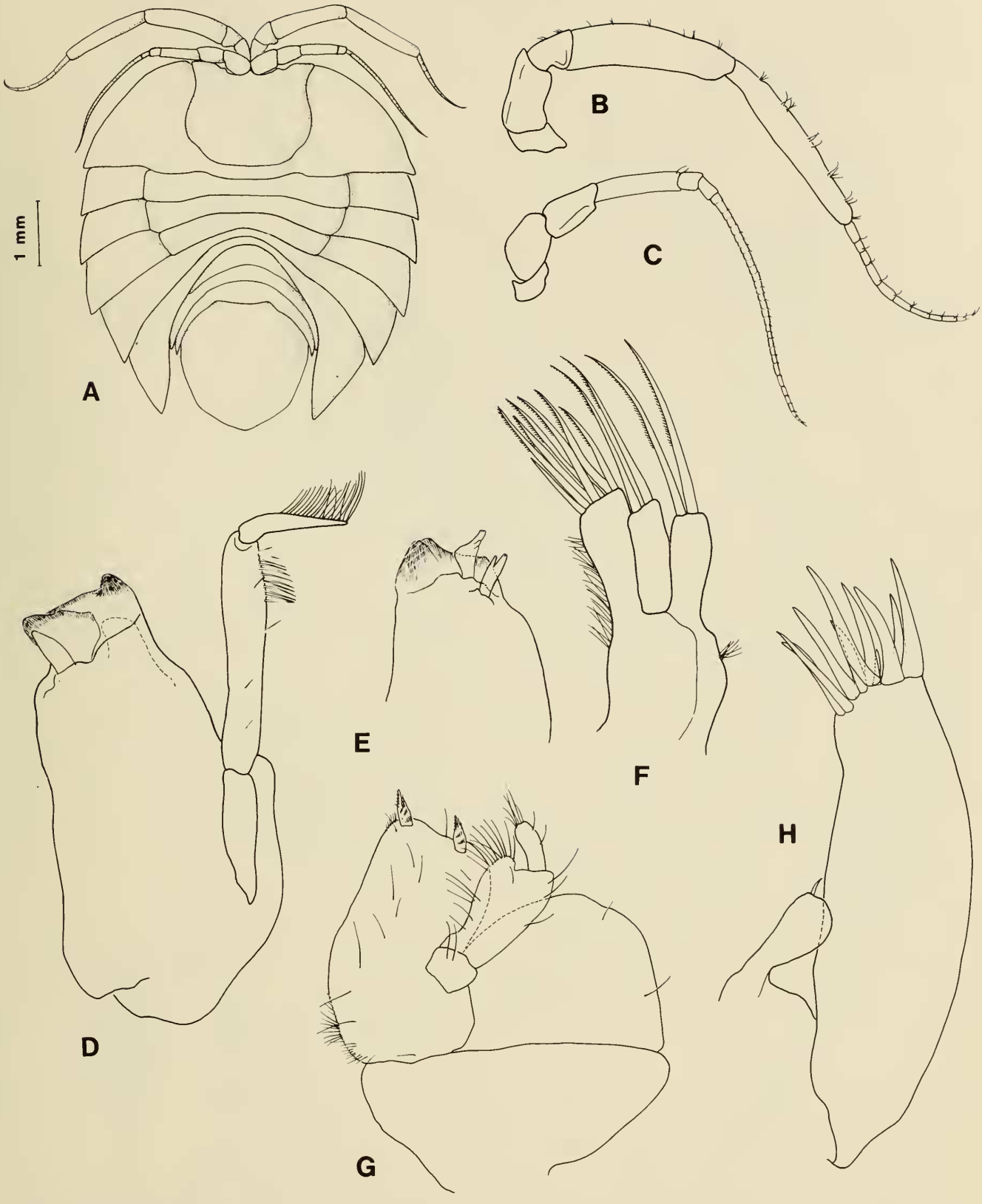

Fig. 1. *Serolis apheles* male. A, dorsal habitus. B, antenna. C, antennule. D, left mandible. E, cutting edge of right mandible. F, second maxilla. G, maxilliped. H, first maxilla.

rior margin of pereonite 1, flagellum of 14 articles. Mandibles, maxillae and maxilliped as figured, typical of genus.

Propodus of pereopod 1 having alternating slender bifid setae and broad setulose setae; carpus with 2 stout, bristly, hooked setae on distal margin. Propodus of male pereopod 2 with 5 stubby setae proximally

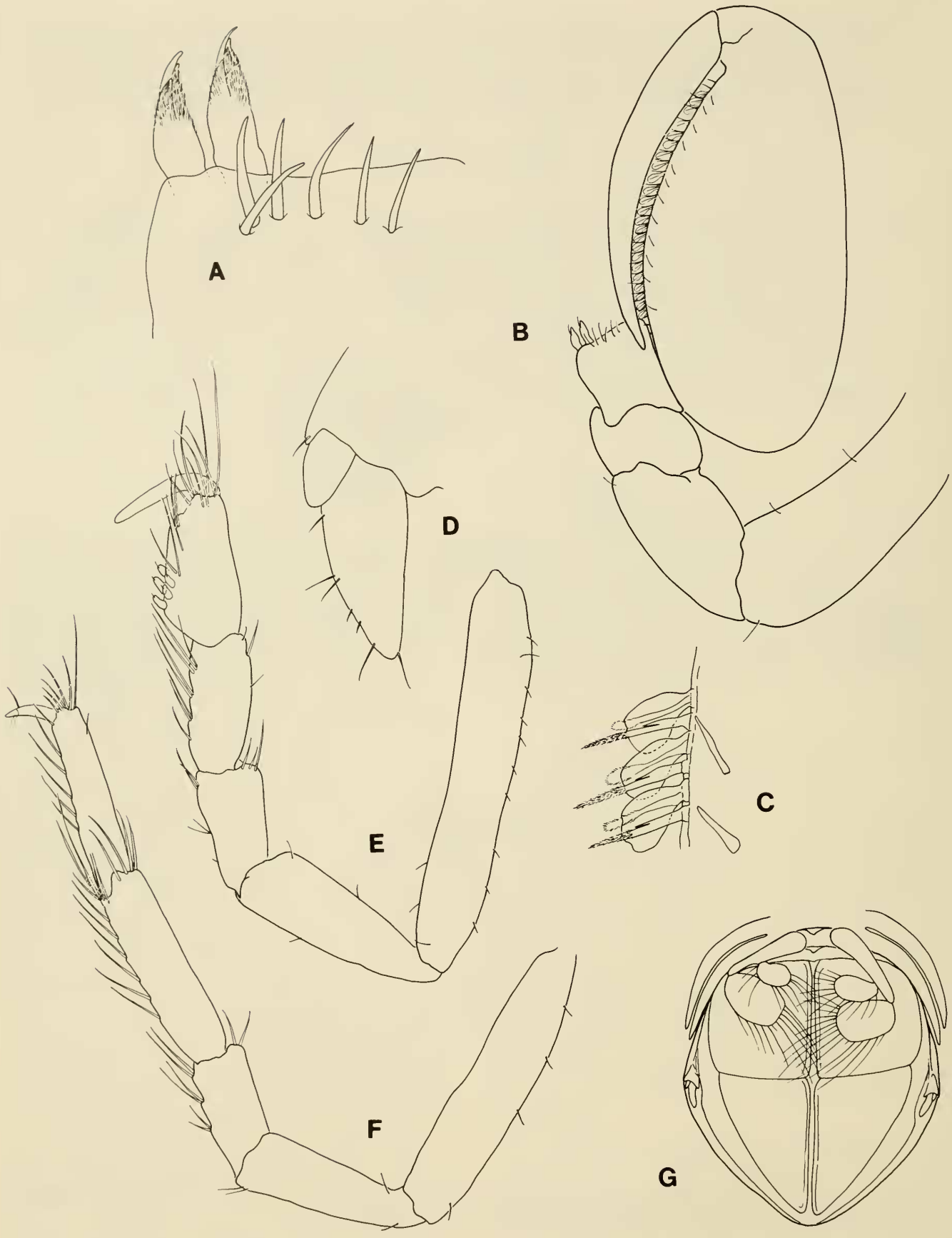

Fig. 2. *Serolis apheles* male. A, detail of distal edge of carpus, pereopod 1. B, pereopod 1. C, detail of armature on propodus of pereopod 1. D, uropod. E, pereopod 2. F, pereopod 7. G, ventral pleotelson.

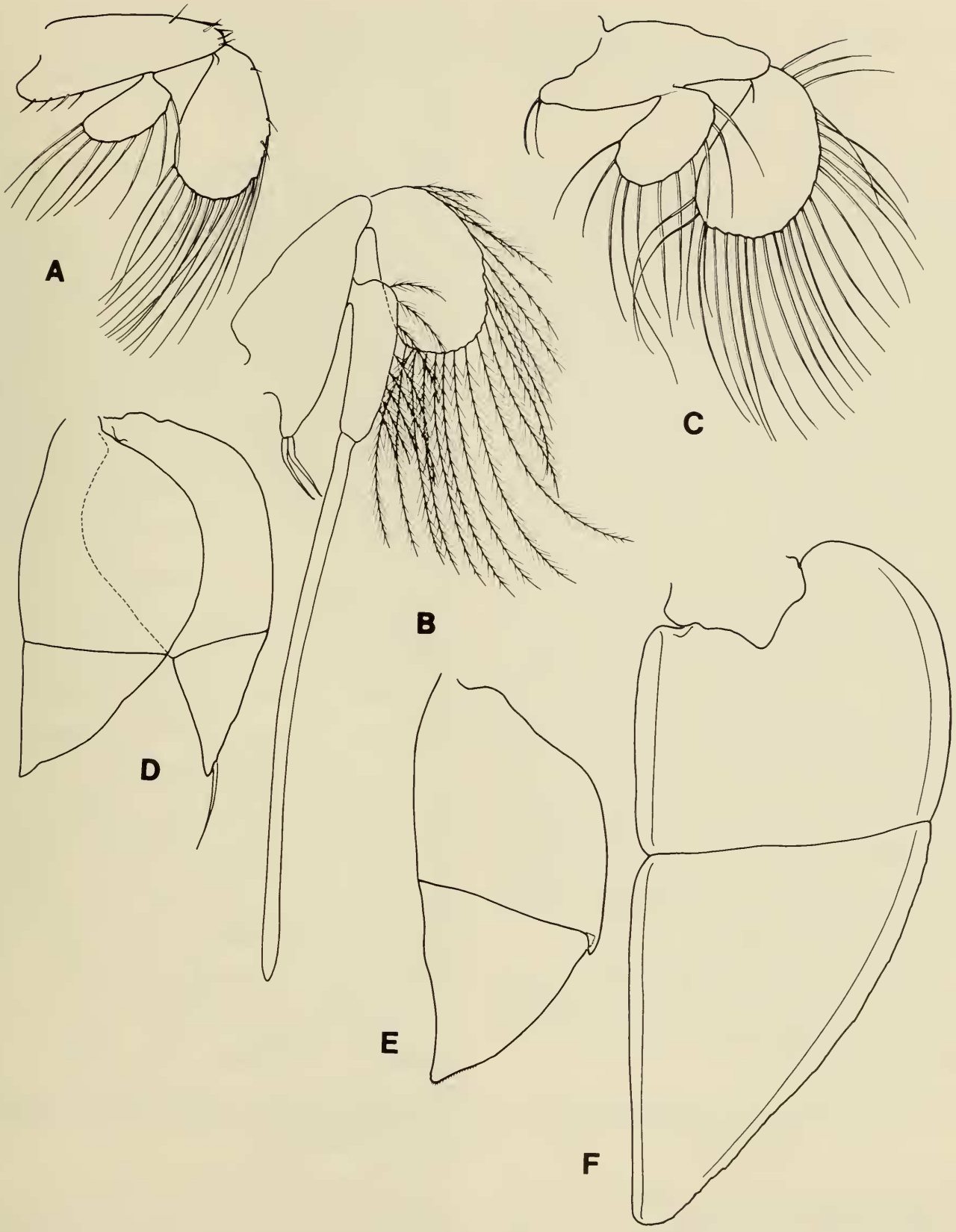

Fig. 3. *Serolis apheles* male. A, pleopod 1. B, pleopod 2. C, pleopod 3. D, pleopod 5. E, F, endopod and exopod of pleopod 4.

on inner margin; propodus and carpus with many long setae, sometimes paired. Pereopod 7 having many long setae on distal margin of propodus and on inner margin of propodus and merus.

Pleopods 1 and 3 with subelliptical rami, exopods nearly twice as long as endopods. Appendix masculina of second male pleopod 3.4 times length of endopod. Both rami of pleopod 4 with tranverse sutures near midpoint; both rami of pleopod 5 with sutures at distal two-thirds of lengths. Uropods small and ventral, not visible dorsally; exopod about one-third length of endopod.

Remarks.—The new species can be distinguished from all its cogeners by the combination of small size at maturity, the lack of any sculpture on the dorsum, absence of eyes, and the length of the coxal plates on pereonites 5 and 6 relative to the pleotelson. It is similar in shape to *S. margaretae* Menzies, 1962, collected off Tierra del Fuego, but lacks the eyes and pleotelsonic middorsal carina found in the latter. *S. brinki* also recorded off southeastern Africa, is also blind but does not possess the extended coxal plates found in the new species. *S. monodi* Cals, 1979, lack eyes and has reduced uropods like *S. apheles;* likewise, it has little dorsal ornamentation except on the pleotelson, whose sculpturing separates it readily from the new species.

Etymology.—The specific name is derived from the Greek "apheles" meaning "smooth, simple," characterizing the unadorned integument.

Serolis antarctica Beddard, 1884
Fig. 4A–C

Serolis antarctica Beddard, 1884a:333–334; 1884b:plate III, figs. 1–6.

Material.—USNM 252417, 1 female, TL 31.5 mm, IIOE R/V *Anton Bruun* cr. 7, sta 369 F, Agassiz trawl, 24°04′S–24°07′S, 36°15′E–36°11′E, 1611–1629 m, 17 Aug 1964.

Previous records.—Southern Indian Ocean, between Prince Edward Island and Crozet Islands: 46°46′S, 45°31′E to 46°16′S, 48°27′E, 2516–2928 m; off Pernambuco, Brazil: 9°10′S–34°49′W, 732 m (Beddard 1884b).

Remarks.—The three syntypes of *S. antarctica* (one male, two females) from BMNH were examined and compared with the present specimen; obvious variations can be seen as well as identical features (see Fig. 4A–C). The mouthparts, antennal bases, keeled sternites, pleopods (female), and uropods seem to be identical. Antennal flagellae could not be counted since in the types there are no such whole appendages. In the Natal Basin specimen, a female, the second and third pleonites extend beyond the midpoint of the telson; the sixth coxal plates extend beyond its apex by a quarter of its length. Small, densely opaque areas, perhaps retaining vestiges of facets, appear where the eyes should be but are probably non-functional. The dorsum has no middorsal tubercles on the somites as seen in Beddard's types and the degree of dorsal reticulation in general is much less although still evident. In the type specimens there are no vestigal eyes but raised areas exist in that position. The pleonites do not extend beyond the midpoint of the telson and the sixth coxal plates do not extend beyond its apex although they appear somewhat longer in the male. The types have keels along the outer edge of the first coxal plates and are absent in the present specimen, which is also considerably broader than the female types. Sculpturing and ornamentation of the telson, key features in separating serolids, seem to be identical in both variants.

Sexual dimorphism and variation in coxal plate extension have been illustrated in other serolids, e.g., *S. gracilis* Beddard, 1884b and *S. bromleyana* Suhm, 1876. Dorsal tuberculation has been shown to vary among conspecifics of the *S. minuta* group (Holdich & Harrison 1980). The present specimen is assigned for now to the species *S. antarctica* in light of evidence that se-

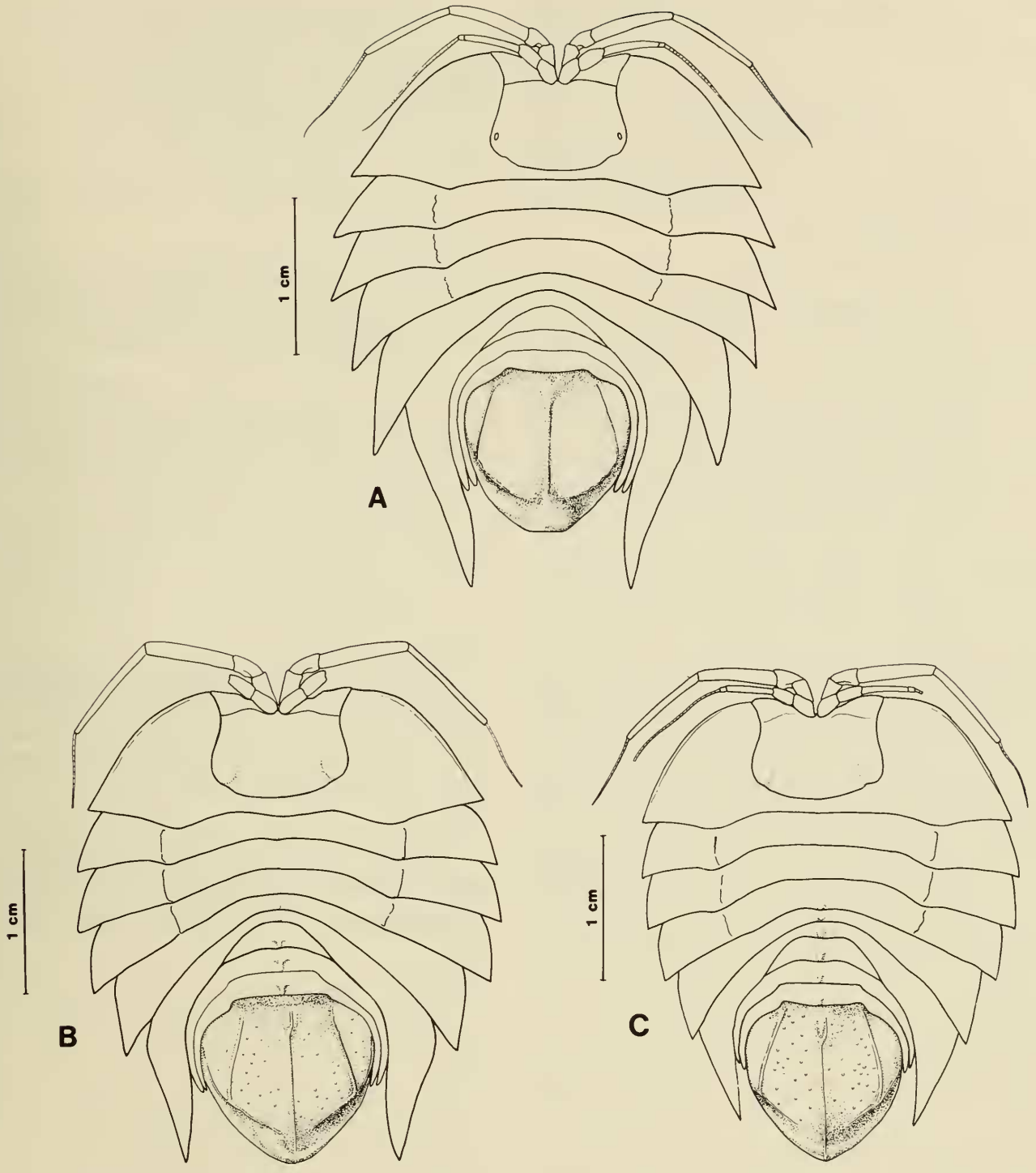

Fig. 4. *Serolis antarctica*. A, female, from Natal Basin, off Mozambique, habitus. B, male syntype, from off Kerguelen Island, habitus. C, female syntype, same locality, habitus.

rolids have a known potential for intraspecific morphological variation, especially when different lots may represent extremes of the geographical range. The current record represents a considerable northerly extension of the species' range in the Indian Ocean and suggests that the Natal Basin is connected to sub-Antarctic waters at abyssal depths. The original description of *S. antarctica* is based on material collected during the *Challenger* Expedition (1873) from stations near the Crozet Islands at 2516–2928 m (the syntypes) and from off Pernambuco, Brazil at 732 m (Beddard 1884b). The latter specimen was not examined. Hitherto there have been no rec-

ords of *S. antarctica* since Beddard's original report.

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